

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF WISCONSIN

SANDISK CORP.,

Plaintiff,

v.

KINGSTON TECHNOLOGY CO., INC. and
KINGSTON TECHNOLOGY CORP.,

Kingstons.

OPINION AND ORDER

10-cv-243-bbc

Plaintiff SanDisk Corp. holds a number of patents covering flash memory technology that it licenses to companies under broad licensing agreements. Defendants Kingston Technology Co., Inc. and Kingston Technology Corp. (hereafter Kingston) refused to enter into the agreements and instead pursued this action against SanDisk, alleging that the required licenses restrain trade beyond the legal monopoly that patents extend to their holders. To prevail, Kingston had to show at trial both that SanDisk's licensing terms exceeded the scope of its patents and that the licenses have an anticompetitive effect upon the USB flash drive market in the United States. It failed to make the second showing, that SanDisk's licenses will have an anticompetitive effect. Accordingly, judgment will be entered for SanDisk on Kingston's counterclaims under § 1 of the Sherman Act and the California Unfair Competition Law.

EVIDENTIARY RULINGS

As an initial matter, the parties are at odds over the admission of certain designations of deposition testimony that they submitted in lieu of live testimony for some witnesses. When I have relied on deposition testimony in reaching my decision, I have done so after resolving the specific objections to that testimony in favor of the party propounding the testimony. It is not necessary to discuss those objections, most of which were grounded on relevance, prejudice, lack of foundation or lack of personal knowledge.

Three objections require more specific discussion. Both sides objected to the submission of deposition testimony from any individual who was not unavailable to testify in person within the meaning of Fed. R. Civ. P. 32 or who testified live at trial. Dkt. #464-11; dkt. #468-2. Neither side made it clear which witnesses it had in mind. Several of the designations are from witnesses who also testified at trial, such as Douglas Hauck, Darwin Chen and E. Earle Thompson. However, these individuals were officers and designees under Fed. R. Civ. P. 30(b)(6), which means that under Rule 32(a)(3) an adverse party may use their deposition testimony for any purpose, regardless of their availability. Fey v. Walston & Co., Inc., 493 F.2d 1036, 1046 (7th Cir. 1974). I will overrule each side's attempt at a general objection, but I will use deposition testimony from these individuals only if it was submitted by the adverse party.

The final evidentiary dispute concerns SanDisk's objection to Kingston's post trial

submission of deposition testimony from Brett Reed. This testimony is not admissible because it is hearsay. Reed was SanDisk's damages expert in two patent cases that SanDisk brought previously against Kingston and others, 07-cv-605 and 07-cv-607. In this case, SanDisk disclosed Reed initially as a damages expert but never provided Kingston any expert reports by him and did not list him as a trial witness. On July 26, 2011, Kingston filed supplemental disclosures in this case in which it identified Reed as a potential defense witness for the first time. SanDisk objected to Kingston's calling him, arguing among other things that Reed's deposition testimony would not be admissible under Rules 402, 403, 801 or 802. Dkt. #388. Although Kingston chose not to call Reed at trial, it has designated certain portions of the deposition he gave in the 2007 cases, which it wants the court to consider as substantive evidence.

Kingston says that SanDisk's objection is untimely because SanDisk failed to file a motion in limine to exclude Reed's testimony, but there is nothing to this argument. Kingston knew both that SanDisk objected to any testimony from Reed and why it did. Because Kingston never called Reed as a trial witness, the court had no occasion to address the issue during the trial.

The only ground that Kingston asserts for admitting Reed's prior deposition testimony is that it constitutes a party admission and is therefore an exception to the hearsay rule under Fed R. Evid. 801(d)(2). None of the categories of statements deemed party

admissions by Rule 801(d)(2) apply to Reed's testimony. Kingston has not shown that SanDisk manifested its belief that all of Reed's statements were true, Fed. R. Evid. 801(d)(2)(B), that Reed is SanDisk's agent, Fed. R. Evid. 801(d)(2)(C), or that SanDisk authorized Reed to speak on its behalf. Fed. R. Evid. 801(d)(2)(D). The mere fact that SanDisk used Reed as an expert witness in a prior case does not mean that SanDisk believed all of Reed's deposition statements were true, that Reed was within SanDisk's control or that SanDisk authorized him to speak on its behalf in all matters. Kirk v. Raymark Industries, Inc., 61 F.3d 147, 164 (3d Cir. 1995) ("In theory, despite the fact that one party retained and paid for the services of an expert witness, expert witnesses are supposed to testify impartially in the sphere of their expertise.").

Kingston cites two cases in which courts found that a party "authorized" its expert's previous deposition testimony within the meaning of Rule 801(d)(2)(C), but neither case supports its position in this case. In In re Hanford Nuclear Reservation Litigation, 534 F.3d 986, 1016 (9th Cir. 2008), the plaintiff submitted expert testimony about causation at a trial in which the jury was unable to reach a decision. When the case was retried, plaintiff's counsel sought to introduce the same expert's testimony on certain topics but exclude his prior causation testimony, which was damaging to the plaintiff's position. The district court denied the plaintiff's motion to exclude the prior adverse testimony and allowed the defendants to cross examine the expert. The Court of Appeals for the Ninth Circuit upheld

the district court's ruling, holding that the expert's prior causation testimony was fair game for cross examination because his statements became party admissions when he testified at the first trial. In Glendale Federal Bank, FSB v. United States, 39 Fed. Cl. 422 (Fed. Cl. 1997), the plaintiff sought to introduce deposition testimony from the defendant's expert witnesses as substantive evidence. The court held that the defendant had "authorized" the statements of the experts whom it listed as trial witnesses but not the expert who it withdrew after depositions but before trial. Id. at 425. The court reasoned that it was fair to tie a party to its expert's testimony if it retained the expert through trial but that a rule tying a party to its expert's deposition after it withdraws the expert would hinder its ability to control and develop its case.

Unlike the testimony under consideration in Glendale and In re Hanford, Reed's deposition testimony was given in a separate case. Because SanDisk never proffered Reed's testimony in this case, it is neither reasonable nor fair to find that SanDisk authorized Reed's deposition testimony so that it can be deemed a party admission and used against SanDisk. Reed's deposition testimony is inadmissible hearsay in this case and will be excluded.

From the evidence presented at the trial, the admissible portions of the designation depositions and facts stipulated by the parties, I find the following facts.

BACKGROUND

A. The Parties

Plaintiff SanDisk Corp. and defendants Kingston Technology Co. and Kingston Technology Corp. compete to be the largest sellers of USB flash memory drives, nationally and internationally. SanDisk is a vertically integrated manufacturer of flash memory products. It designs, manufactures and markets flash memory chips, controllers, systems and consumer products and sells the finished products worldwide.

Defendants are privately owned companies. They were founded in 1987 to produce memory for personal computers and began selling flash memory products in 2003.

B. Flash Memory and the Flash Memory Industry

Flash memory is a type of solid-state memory technology that stores information when not powered. Flash memory products are sold in different formats, including Compact Flash cards, Secure Digital cards, MultiMediaCard and USB flash drives. USB flash drives consist of one or more flash memory chips (also called devices) and a controller that are assembled on a circuit board into a flash memory system, which is covered in a casing and sold to consumers. The controller is crucial to the workings of the flash memory chips, because it communicates with the host system to enable the chips to store data.

The flash memory industry has seen rapid technological development. Between 2003

and 2009, the capacity of flash memory products increased from between 16 and 256 megabytes to 1 gigabyte (1,024 megabytes) and 4 gigabytes. Between 2000 and 2010, output of NAND flash memory devices (measured by shipments of one gigabyte units) increased by a compounded annual growth rate of more than 125%, while the average sales price fell by a compound annual rate of more than 56.5%.

The participants in the flash memory industry include chip, controller and systems manufacturers, system aggregators and resellers. Six chip manufacturers, SanDisk, Intel, Toshiba, Samsung, Micron Technology, Inc. and Hynix, earned 99% of worldwide revenue from the sales of flash memory chips in 2010. The number of chip manufacturers is limited by the high fixed costs of fabrication facilities, which can take takes several years to build and may cost up to \$8 billion. Except for Hynix, all the major chip manufacturers are vertically integrated, which means in the context of this case that they manufacture chips, controllers and systems, although they may not place the systems in a casing and sell the final product to retailers or consumers.

Several firms manufacture and sell flash memory controllers, such as Hitachi, Ltd., Phison Electronics Corp., Silicon Motion Technology Corp., Skymedi and Solid State System Co., Ltd. Systems aggregators purchase components, such as flash memory chips, controllers and circuit boards on the open market, assemble them into flash memory systems, place them in a housing and sell the finished product to retailers or directly to

consumers. Resellers purchase fully assembled flash memory systems, place them in housings labeled with their brand and resell the finished products.

C. Markets

USB flash drives have few if any adequate substitutes in the field of portable memory storage. Rewritable compact discs and digital versatile discs have much smaller capacity, are slower, are damaged more easily, require a separate drive and are not as portable. External hard drives serve a different purpose and follow different pricing patterns. They are larger, slower and require an external power supply. Even the smallest external hard drive is physically larger than most flash drives. Flash drives are much cheaper than comparable hard drives for up to 16 gigabytes of memory, but even when the per gigabyte price for flash drives exceeds that of external hard drives, consumers still do not use external hard drives as substitutes for flash drives. The pricing for USB flash drives is largely independent of the pricing of external hard drives or CDs and DVDs.

Other flash memory systems such as Secured Digital cards (SD cards) and Compact Flash cards offer the closest substitutes, but they serve different functions and have limitations that USB flash drives do not. SD, Micro-SD and Compact Flash cards are thin cards used in phones or cameras that serve primarily as digital film substitutes. Unlike USB flash drives, they are not readily compatible with computers and often require a special

adapter to interface with a computer's USB port. When both are necessary, the combination is almost twice the price of a USB flash drive. Changes in the price of SD or Compact Flash cards do not seem to have any correlative effect on the USB flash drive market or any influence on the pricing decisions of USB flash drive manufacturers. In the contemporary market, no close substitutes exist for USB flash drives.

A large number of firms sell USB flash drives in the United States. Market shares have fluctuated significantly over time, with no firm having a dominant market share. Impediments to entry are few: the percentage of the market held by small firms with less than a 1% market share increased from 16 to 35% between 2006 and 2010 and the percentage held by private labels sales doubled from 5 to 10%. In addition, between 2000 and 2010, output of USB flash drives increased by more than 125% annually while prices decreased by more than 56.5%, despite an increase in demand for flash memory devices.

The market for flash memory technology consists of the market for the technology to produce flash memory chips and assemble them into flash memory systems like USB flash drives. SanDisk enjoys market power in the market for flash memory technology. Not only does SanDisk have 1,700 United States patents relating to flash memory technology, it was unable to identify at trial a commercially viable flash memory product that does not practice its technology or any flash memory firm that does not use its technology in its flash memory systems. SanDisk takes the position that anyone selling flash memory systems in the United

States needs a license from it and it enforces this position with litigation. SanDisk also licenses the manufacturers that sell 89% of the flash memory chips in the world. Only one flash memory chip manufacturer, Micron, has not accepted a license with SanDisk, but SanDisk requires manufacturers that use Micron chips in their own systems to pay SanDisk a royalty on the unlicensed chips.

D. SanDisk's Market Activity

Since 2007, SanDisk's annual expenditures on flash memory research and development have averaged around \$400 million. Slightly more than half of this is spent on chip technology; the rest is spent on the technology to incorporate these chips into flash memory systems. In 1995, SanDisk held 30 United States patents relating to flash memory technology, 36 pending United States patents and several pending foreign patents. By 2011, SanDisk had more than 1,100 pending patent applications and more than 1,700 flash memory patents in the United States, along with more than 1,100 flash memory patents in foreign countries, including China, France, Germany, Italy, Japan, Korea, the Netherlands, Taiwan and the United Kingdom. SanDisk chooses to file for patent protection in these particular countries because most flash memory products are manufactured in or shipped through those countries. In Taiwan, SanDisk has about 240 flash memory patents and 700 pending applications; in China, it has 190 flash memory patents and 700 pending

applications. SanDisk has no patents in Africa, Latin America or Eastern Europe.

SanDisk uses its patented technology to manufacture flash memory chips and flash memory systems in various formats, including Secure Digital cards and USB flash drives. SanDisk's largest share of the USB flash drives market was 34% of worldwide revenue in 2006 and 40% of United States revenue in 2009. By 2011, its market share had dropped to 18% worldwide and 34% in the United States.

In addition to manufacturing flash memory products, SanDisk licenses its patents to companies throughout the flash memory industry. Between 1995 and 2009, it earned \$2.5 billion in royalty revenues from its flash memory licenses, an amount that corresponds roughly to its research and development expenditures. SanDisk and its licensees accounted for 89% of worldwide revenue from flash memory chips in 2010. The only large chip manufacturer that is not a licensee of SanDisk is Micron, which has a market share of between 8 and 10%. SanDisk also licenses flash memory aggregators, which include PNY Technologies, Inc., Riteck, Silicon Motion, TDK Corp., Trek and Welldone Technologies.

SanDisk's general licensing practice is to offer only worldwide and non-exclusive cross-licenses for its full portfolio within certain "fields of use." Each party to the license receives the right to use all of the other's existing flash memory patents and any new patents acquired during the term of the cross-license. The licensees and SanDisk remain free to license their existing and new patents to third parties. SanDisk does not license its patents

individually or vary the royalty rate according to the number of patents the licensee uses. The licenses cover a “device-level” field of use, a “system-level” field of use or both. Device-level royalties are calculated as a percentage of the sales price or value of the flash memory chips, while system-level royalties are calculated as a percentage of the sales price of the flash memory product containing the system. If a licensee sells flash memory systems that contain an unlicensed chip, it pays an additional royalty on the value of the chip. SanDisk has an express policy of not licensing manufacturers to sell controllers separately.

In 1995, SanDisk entered into portfolio cross-licenses with Intel; in 1997, it entered into similar licenses with Toshiba and Samsung. These firms agreed to pay royalties on all worldwide sales of flash memory chips and products, whether or not they practiced SanDisk’s patents. In 2002, Toshiba’s cross-license became royalty free as part of its joint venture with SanDisk to manufacture flash memory wafers. Under SanDisk’s latest agreement with Samsung, Samsung pays a 2.5% royalty on the sales price of flash memory chips or any finished product, regardless whether it uses licensed or unlicensed chips. These agreements also give SanDisk the right to purchase 20% of Toshiba’s output and 10% of Samsung’s output. In 2007, SanDisk entered a portfolio cross-license with Hynix.

E. SanDisk’s Lawsuits and Standard Card Licensing Offer

In 2007, SanDisk filed a patent infringement suit before the International Trade

Commission against numerous flash memory aggregators. In October 2007, SanDisk filed two actions in this court, 07-cv-605 and 07-cv-607, against many of the same aggregators, charging that they had infringed seven of SanDisk's flash memory patents. In December 2007, SanDisk sent a "standard card license" offer to each of the defendants in the cases, including Kingston. Exh. #1501. When SanDisk presented the licensing offer, it told the defendants that the offer was non-negotiable and that it would pursue them in litigation until they accepted the license.

The standard card license followed SanDisk's general licensing practices. The aggregator licensee would pay system-level royalties equal to 4% of the sales price from any flash memory product sold worldwide. If it used unlicensed flash memory chips, it would pay an additional royalty of 4% or 8% of the cost or fair value of the chip. The total royalty was capped at \$4.00 a unit. The royalty would not vary by the percentage of the licensees' sales in the United States and would include sales in countries in which SanDisk holds no patents or has never filed patent infringement claims. The aggregators would not be required to use SanDisk's technology or purchase anything from SanDisk. The aggregators' licenses would last five years, although some of SanDisk's other licenses last seven years.

Several defendants in the ITC and the 2007 cases negotiated settlement agreements with cross-licenses. Many signed the standard licensing agreement with few changes. In June 2007, Ritek accepted a licensing agreement under which it would pay an initial

\$970,000 lump sum, a 4% royalty on the sales price of each licensed product up to \$4.00 a unit (4.5% in the first year with no maximum) and an additional 4% on the price of unlicensed chips. In December 2007, Trek entered an agreement to pay a 3% royalty on sales price of any USB flash drives sales worldwide and an additional 4% royalty on the price or value of any unlicensed chips. Between January 2008 and October 2008, SanDisk entered licensing agreements with at least nine other companies, including Infotech Logistic, LLC and PNY. All of the licenses used a worldwide royalty base and required royalty payments at the chip and system level.

Buffalo Technology USA was one of the aggregators that SanDisk sued before the ITC in the 2007 cases. From 2004 to 2007, Buffalo's domestic sales of flash memory products doubled each year to more than \$400,000. Buffalo did not believe it had violated any of SanDisk's patents, but it agreed to a consent judgment in March 2008, in which it agreed to stop selling any flash memory products in the United States that were not purchased from SanDisk or its licensees. In April 2010, SanDisk voluntarily dismissed Buffalo from the 2007 cases because Buffalo had substantially complied with the consent order.

F. Kingston's Market Activity

When Kingston began selling flash memory products in 2003, it acted as a reseller,

purchasing completed flash memory systems from third parties, placing them in a casing and selling them under its brand. In 2005, Kingston became an aggregator. It assembled its own flash memory systems from chips purchased from large chip manufacturers licensed by SanDisk and controllers purchased from specialized manufacturers. The chips make up 77% of the average cost of Kingston's flash drive; the controller makes up the remaining 6.2%.

Between 2006 and 2008, Kingston's worldwide revenue from USB flash drives increased from \$336 million to \$814.8 million. During that period, a significant oversupply of flash memory chips enabled Kingston to purchase chips from manufacturers cheaply, sometimes below the manufacturer's cost. (Manufacturers sometimes find it financially advantageous to sell chips below cost rather than stockpile them.) Kingston's strategy was to increase its market share by underpricing competitors, even if doing so reduced its profit margin. In 2008, Kingston overtook SanDisk as the world's largest seller of USB flash drives and obtained its highest market share in the United States, at around 13%.

In 2009, Kingston changed its domestic manufacturing from an aggregator model back to a reseller model to limit its potential liability from SanDisk's lawsuits. Kingston now purchases pre-assembled USB flash drives cards from a single supplier, Toshiba; places them in the external casing; and sells them under its label. Kingston's market share in the United States began dropping after it adopted the reseller model. Its domestic expansion reversed and its market share fell from 13% in 2008 to 9% in 2009 and 2010. Kingston's foreign

operations continue to use the aggregator model. Kingston's share of the worldwide revenue from USB flash drive sales increased from 28% in 2008 and 2009 to 31% in 2010.

G. Proceedings in this Case

On May 4, 2010, SanDisk filed this suit, alleging that Kingston had infringed six different patents held by SanDisk. Kingston filed counterclaims for injunctive relief, alleging that SanDisk had violated various antitrust and unfair competition laws. I granted Kingston's motion for summary judgment with respect to SanDisk's infringement claims, *dkt. #312*, and SanDisk's motion for summary judgment with respect to Kingston's monopolization and attempted monopolization counterclaims under § 2 of the Sherman Act and Wis. Stat. § 133.03. *Dkt. #327*. Kingston proceeded to trial before the court on one of its counterclaims under § 1 of the Sherman Act, 15 U.S.C. § 1, alleging that SanDisk's license agreements unreasonably restrain trade in the United States USB flash drive market by requiring double royalties and a worldwide royalty base, and its counterclaim under the California Unfair Competition Law, Cal. Bus. & Prof. Code § 17200, alleging that SanDisk's discriminatory licenses constitute unfair business acts or practices.

OPINION

A. Section 1 of the Sherman Act

1. Legal background

Section 1 of the Sherman Act prohibits acts of “conspiracy in restraint of trade or commerce.” 15 U.S.C. § 1. “[T]o establish liability under Section 1 of the Sherman Act, a plaintiff must demonstrate that the defendants conspired to achieve an unlawful objective and that the resulting restraint of trade was unreasonable.” Bi-Rite Oil Co. v. Indiana Farm Bureau Cooperative Association, 908 F.2d 200, 202 (7th Cir. 1990) (citations omitted).

Kingston argues that SanDisk’s licensing terms exceed the scope of its patents and that these licenses will restrain trade in the USB flash drive market in the United States. Because Kingston is not alleging that SanDisk’s licensing agreements are *per se* unreasonable restraints, the licensing agreements are evaluated under the “rule of reason,” Leegin Creative Leather Products v. PSKS, Inc., 551 U.S. 877 (2007), which requires “an inquiry into market power and market structure designed to assess a [restraint’s] actual effect.” Id. at 886 (quoting Copperweld Corp. v. Independence Tube Corp., 467 U.S. 752, 768 (1984)).

Kingston must identify the relevant market and “show that the challenged restraint has an adverse impact on competition in the relevant market.” Bi-Rite Oil, 908 F.2d at 203. Kingston does not have to prove that SanDisk has a monopoly or a dangerous probability of achieving a monopoly in the market, but in this circuit at least, it must meet a market

power threshold. Valley Liquors, Inc v. Renfield Importers, Ltd., 822 F.2d 656, 666-67 (7th Cir. 1987). Market power may be inferred from a substantial market share (generally around 50% but perhaps as low as 17% with additional evidence about the elasticity of demand and supply) or shown by direct evidence of anticompetitive effects on price or output. Id.; Toys "R" Us, Inc. v. F.T.C., 221 F.3d 928, 937 (7th Cir. 2000). After meeting this threshold, Kingston must demonstrate that SanDisk has or will use its market power to take actions that will likely reduce output or raise prices in the relevant market. Id.

In a case involving patents such as this one, it is not enough for a defendant to prove that a patentee's licensing of patents will raise prices or decrease output. As I explained in prior opinions in this case, Nov. 15, 2010 Order, dkt. #100, at 13-15; Oct. 13, 2011 Order, dkt. #327, at 27, the patentee's legal monopoly gives it the right to restrain competition within the scope of its patent. A patentee does not restrain trade unreasonably unless it uses its patent monopoly to restrain competition beyond the scope of its legal monopoly. Zenith Radio Corp. v. Hazeltine Research, Inc., 395 U.S. 100, 135-36, 139-41 (1969); Microsoft, 253 F.3d at 62.

To succeed at this stage of its § 1 claim, Kingston had to prove that SanDisk uses its licenses to restrain trade beyond the scope of its patents. To that end, Kingston argued that SanDisk restrained trade beyond the scope of its patents by requiring its licensees to pay royalties on worldwide sales even in nations in which SanDisk has no patent rights and by

using a system-level “field of use” that produced “double royalties” on the same patents for the same products. Even if Kingston could prove its contention that the license terms exceeded the scope of the patents, it would still have to prove that imposition and enforcement of these challenged terms will adversely affect the USB flash drive market in the United States.

In summary, to prove its claim under § 1, Kingston needed to prove at trial both that (1) the worldwide royalty base or systems-level field of use terms in SanDisk’s licenses exceed the scope of its patents and (2) imposing these invalid licensing terms on competitors was likely to increase price or decrease output in the USB flash drive market. Kingston was unable to prove the second of these prerequisites to its claim, that is, that the challenged license terms would have an adverse effect upon the market for USB flash drives in the United States. Therefore, it is not necessary to address the first prerequisite, which is that SanDisk uses licensing terms that are beyond the scope of its patents.

2. Relevant markets and market power

Kingston argues, and I agree, that two relevant markets can be used to evaluate the competitive effect of SanDisk’s licensing practices. As described earlier, one is the market for USB flash drives, in which no close substitutes exist for USB flash drives; the other is the United States market for flash memory technology in which SanDisk enjoys market

power through its large flash memory technology patent portfolio, for which no substitute exists.

3. Anticompetitive effects

Kingston has a straightforward theory about how SanDisk's licenses adversely affect competition. If SanDisk uses its power in the technology market to force aggregators to pay worldwide and double royalties, the aggregators' costs will rise and they will either pass their costs on to consumers, switch to a reseller model or exit the market. Prices will increase (or, at least, not fall as fast) because aggregators are more efficient and have used their cost advantage to drive down prices. SanDisk has two incentives to eliminate aggregators: the price of its USB flash drives would increase and its royalties would increase because they are calculated as a percentage of the price of each flash drive sold.

The core of Kingston's theory is that forcing aggregators to pay higher royalty costs will raise the market price for USB flash drives. Dr. Russell Mangum, Kingston's expert witness, testified that as a matter of general economic theory, when the costs for suppliers increase, the supply curve shifts inward and either price increases or the quantity supplied decreases.

Kingston's theory focuses on a single variable, an increase in cost for the entire market. It neglects the fact that even if paying SanDisk's royalties increases aggregators'

costs, aggregators provide only part of the supply of USB flash drives. The relevant question is whether increased costs for aggregators will raise the overall market price. This is a matter of proof, not of mere assumption that aggregators can pass on higher costs with higher prices. It requires consideration of the nature of the market and possible responses of aggregators and other firms to the higher royalty costs. In addition, the theory does not take into account SanDisk's relevant patents on flash memory chips and systems. Kingston fails repeatedly to distinguish the effects of SanDisk's valid royalty demands from its allegedly improper ones. Instead, it assumes that the correct comparison is between a situation in which aggregators pay no royalties to SanDisk and a situation in which aggregators agree to SanDisk's standard licensing program. Obviously this is incorrect. The relevant question is whether the alleged extension of SanDisk's royalties beyond the scope allowed by its patents will adversely effect competition.

Once some of the complexity of the real counterfactual question comes into focus, several questions demand analysis:

- (1) if aggregators must pay SanDisk's putatively invalid royalty demands, will they pay the royalties to continue their current operations, switch to being resellers or leave the United States markets?
- (2) if aggregators pay the royalties or remain as resellers, what will happen to the price and quantity of USB flash drives in the United States?
- (3) if some aggregators leave the market, will other aggregators, resellers or vertically integrated manufacturers increase their production of USB flash

drives and prevent a drop in quantity or increase in price?

Kingston failed to present sufficient evidence to allow the court to reach reliable conclusions about any of these three questions.

a. If aggregators must pay SanDisk's putatively invalid royalty demands, will they pay the royalties, switch to being resellers or leave the United States markets?

Kingston has adduced no persuasive evidence about what effect, if any, SanDisk's putatively invalid licensing terms have had or will have on aggregators generally or on Kingston in particular. It asserts that SanDisk's licensing program has already caused aggregators to reduce production and exit the market. In support of this assertion, Kingston compiled the following evidence about the performance of aggregators in the United States USB flash drive market:

Since 2006, the number of aggregator and reseller firms has fallen and several large firms have reduced their sales. Memorex sold \$86 million in USB flash drives in 2006 but its sales decreased by more than \$21 million in 2007 and fell precipitously after 2008. Memorex signed a license with SanDisk in late 2007. Imation had more than \$11 million in sales in 2006, but its sales fell to around \$613,000 by 2010. Imation was sued by SanDisk in 2007 and signed a license in January 2011. Ritek and A-Data have also reduced their presence after 2006.

Several aggregators reduced their USB flash drive sales after signing licenses with SanDisk in 2007. Buffalo sold \$400,000 worth of USB flash drives in the United States in 2007, but stopped all sales after its consent judgment. Welldone, Add-on and Infotech have stopped sales in the United States since accepting licenses. Welldone paid \$788,000 in royalties in 2009

but none in 2010 or 2011. Add-on paid approximately \$20,000 in royalties in 2008 and 2009 but none in 2010 or 2011. Interactive Media, Kaser and TSR all agreed to licenses but paid no royalties. These three firms either stopped selling USB flash drives, switched to being resellers or stopped paying royalties, but Kingston submitted no evidence about which of these things occurred.

Kingston argues that this evidence shows that SanDisk's licensing program has hurt competition in the USB flash drive market. Although Dr. Mangum, Kingston's expert, introduced this evidence, he never made any such claim. In fact, Mangum clarified his testimony on cross examination, explaining that he was not saying that SanDisk's licensing program caused these aggregators to reduce their sales. Tr. Trans., dkt. #465, at 96-97, 105-06. This was a wise admission. He performed no analysis, quantitative or qualitative, to determine why the aggregators reduced their sales or to rule out potential causes other than the licenses. In fact, several of these firms reduced their sales for reasons unrelated to SanDisk's lawsuits or licenses. Memorex's sales fell by almost 25% in the year before it signed a license with SanDisk. Imation was planning to leave the market in 2007 and reduced its sales by more than 94% before entering a license with SanDisk. Kingston adduced no evidence to suggest that SanDisk's licensing program caused these aggregators to reduce their sales.

Mangum made a second clarification, which was that he was not offering an opinion about what effect SanDisk's licenses have had on prices or output in the flash drive market

since 2007. Tr. Trans., dkt. #465, at 131. This admission is revealing because he was presented with a convenient natural experiment. SanDisk began its aggregator licensing program in 2007. Mangum could have used this event to analyze the effects of SanDisk's licenses on aggregators and market conditions, but he did not. The evidence that was presented suggests that the market has remained competitive despite SanDisk's aggregator licensing program. A large number of firms sell USB flash drives, none is dominant and their shares have fluctuated over time. Few impediments to entry are visible. Small firms sold more than a third of all USB flash drives, a percentage that has doubled in recent years. Such low concentration, high volatility and ease of entry are indicators of vibrant competition. The anecdotal evidence from Kingston's witnesses further confirms the competitive nature of the USB flash drive market. Sun Dep., dkt. # 464-6, at 77; Ciano testimony, Tr. Trans., dkt. #458, at 62; J. Thompson Dep., dkt. #453-2, at 99-100. Kingston adduced no evidence showing that SanDisk's aggregator licensing program has damaged competition in the USB flash drive market since 2007.

Kingston's primary argument is that SanDisk's licenses will harm competition in the future by forcing aggregators to leave the market. As evidence, Kingston offered testimony from officers of several aggregators that they cannot compete while paying SanDisk's royalties. It followed this with a series of arguments that it will likely leave the United States market rather than pay royalties under SanDisk's proposed terms.

The testimony that Kingston elicited from executives of other aggregator firms was largely conclusory. Kingston submitted deposition testimony from Jeff Thompson, the President, CEO and founder of Edge Tech, a company that sold approximately \$7.5 million in USB flash drives in the United States in 2007. SanDisk sued Edge Tech in 2007 and sent it the standard card license. SanDisk told Thompson that no changes would be made to the license, but Thompson did not want changes. He wanted all the aggregators to sign similar agreements because Edge Tech might be unable to compete if it paid higher royalties than its competitors.

Edge Tech paid \$190,871 in royalties in 2008 and \$28,650 in 2009, but none in 2010 or 2011. From 2008 to 2009, Edge Tech's gross profit from USB flash drives decreased around 70%, and it was not profitable in 2010. If Edge Tech paid royalties in 2010 and 2011 similar to those that it paid in 2008, it would owe around \$124,000 annually, bringing its annual losses to \$200,000. Thompson stated that Edge Tech would not be competitive if it paid these royalties and would likely stop selling USB flash drives. Id. at 63-64.

Although Edge Tech's losses would increase if it paid SanDisk's royalties and Thompson may reasonably predict his company's response to such losses, his deposition testimony does not prove that SanDisk's allegedly improper licensing terms will cause Edge Tech to leave the USB flash drive market. Thompson never suggested that SanDisk's

license caused Edge Tech's problems that began in 2009. In fact, Edge Tech suffered losses in 2010 or 2011 while paying no royalties. Moreover, Thompson did not testify that he believed SanDisk's royalty demands were outside the scope of its patents. In short, Kingston has not proven by a preponderance of the evidence that improper terms in SanDisk's license will cause Edge Tech to reduce its sales or leave the United States markets.

Kingston presented similar testimony from Mark Ciano, Vice President of Finance for PNY. PNY has sold flash memory products in the United States since 2000, averaging approximately \$150 million in USB flash drives sales annually. Until 2009, PNY was a reseller and purchased 95% of its products as completed systems. Ciano oversees PNY's accounting, treasury and human resources departments and supervises the calculation of the royalties that PNY pays under its license with SanDisk.

SanDisk sued PNY in 2007 and sent it the standard card license offer. PNY asked for changes to the worldwide royalty base, but SanDisk's CEO responded that

my offer to [PNY's representative] was based on the clear understanding that they were going to accept without any material changes to our standard contract. I specifically told [PNY's representative] for establishing a fair playing field to all licensees, we do not have the room to customize agreements for each license. He agrees that it's not to be a lawyer-to-lawyer negotiations but that we could keep it simple (i.e., virtually no changes—he raised none with me).

Exh. 655. Several days later, PNY signed a licensing agreement containing SanDisk's standard worldwide royalty base and field of use provisions. Exh. 1541.

PNY did not believe that these provisions would affect it, because it would not owe royalties on systems it purchased from SanDisk's licenses for resale. However, in 2009, PNY switched to an aggregator model. Now it purchases only 10 to 15% of its systems complete. To date, PNY has paid about \$800,000 in royalties on more than \$150 million in sales. SanDisk sued PNY after an audit concluded that it had withheld between \$21 and \$30 million in royalty payments, an amount equal to PNY's profit for the last two years. PNY contests the audit and denies that it owes these sums under their agreement. Ciano testified that if PNY paid the disputed royalties, it would be unable to compete.

However, Ciano admitted that PNY has never considered leaving the United States market. In fact, during the time in which PNY has had a license from SanDisk, PNY's prices fell 20% and its sales increased. Moreover, Ciano has substantially conflicting incentives for his testimony. In the lawsuit over the disputed royalties, PNY filed antitrust counterclaims alleging that the worldwide licenses and double royalties violate antitrust laws. PNY likely regrets accepting these license terms because it did not foresee that it would switch to an aggregator model. In light of PNY's past market performance and Ciano's conflict of interest, I am not persuaded by Ciano's conclusory testimony that SanDisk's license will cause PNY to reduce its USB flash drive sales or exit the United

States market.

Finally, Kingston argues that SanDisk's licensing demands will likely cause Kingston to leave the USB flash drive market in the United States and that if it leaves, competition will be harmed. Kingston's argument rests on two premises: (1) it cannot afford to continue acting as a reseller and (2) it cannot afford to pay the royalties charged under SanDisk's standard licensing offer to be an aggregator.

To support the first premise, Kingston relies primarily on its sagging domestic performance. After it adopted the aggregator model, Kingston's market share in the United States increased from 8% in 2005 to 13% by 2008. The next year, it switched back to a reseller model in the United States and its domestic expansion underwent a reversal. Its market share declined to 9% in 2009 and 2010. Meanwhile, its worldwide market share remained stable in 2009 and increased from 28 to 31% in 2010.

Darwin Chen, Kingston's Vice President of Sales and Marketing, testified about how switching to a reseller model has affected Kingston. Chen has been responsible for strategy, business development and product management in Kingston's flash memory business since 2003. Chen does not believe the reseller model is sustainable, because Kingston can no longer search for the cheapest components from different manufacturers. This hinders its ability to expand its market by competing on price and maintain the perception that it is a price leader. Chen testified that if Kingston must continue operating as a reseller, it

cannot be competitive and will eventually leave the market.

Mangum testified that, in his opinion, the reseller model caused Kingston's sales to stagnate in the United States, suggesting that it is not a viable long-term business model. I do not find his conclusion reliable. The bases for it were conversations with Kingston's executives and his theoretical analysis of the reseller and aggregator models. He performed no direct analysis of Kingston's performance. Mangum did not compare Kingston's costs or profits as a reseller to those of other manufactures, analyze Kingston's domestic costs before and after switching to the reseller model or compare Kingston's domestic costs as a reseller to its foreign costs in countries where it remained an aggregator. Kingston submitted spreadsheets that appear to contain the necessary data, Exhs. 197, 198, 200, and 468, but offered no testimony to explain them. Mangum also failed to consider alternative explanations for Kingston's decline in sales, an omission that undermines his opinion.

Kingston introduced no data to support a finding that it would have been more competitive domestically if it had remained an aggregator. The bare correlation between Kingston's declining market share and its switch to a reseller model is weak evidence that the reseller model is less advantageous, but not sufficient to prove that Kingston will leave the market rather than remain a reseller, even when Chen's testimony is taken into consideration. Kingston has not proven by a preponderance of the evidence that maintaining the reseller model in the United States is an unacceptable alternative to paying

SanDisk's licensing fees and that it will be forced to leave the United States USB flash drive market to avoid the fees.

Instead of offering useful empirical analysis about the market conditions in the United States, Kingston insisted on comparing its profit margin when paying no royalties to its profit margin if it paid SanDisk's worldwide royalty on both fields of use. If Kingston pays worldwide royalties on both fields of use, it would owe approximately \$40 million a year in royalties from sales in countries in which SanDisk has no patents and in which its competitors pay no royalties. Its average net profit on worldwide sales would drop from 3.2% to .9%. Kingston argues that this \$40 million should be considered a royalty on United States sales, because SanDisk is using the United States license as leverage to extract foreign royalties to which it has no legal right. Under Kingston's theory, the effective royalty on its United States sales would average around 40% and its average profit margin on domestic sales would fall to -19.2%. According to Mangum and Chen, Kingston would exit the United States market rather than accept such a high loss on its United States sales.

This calculation is misleading because Kingston has specified the counterfactual situation incorrectly. The \$40 million figure does not account for the portion of royalties within the scope of SanDisk's patents, such as royalties on flash memory chips in countries in which it has patents. Kingston manufactures all of its flash memory products in China, Taiwan and the United States, countries in which SanDisk has flash memory patents. Chen

testified that SanDisk has never shown Kingston any of its Taiwanese or Chinese patents, but this testimony is not proof that those patents do not cover Kingston's products.

Kingston offered one calculation that would control for SanDisk's valid foreign royalties. If Kingston paid royalties only on sales in the United States, its average margin on domestic sales would fall from a 1.6% profit to -.7% loss. However, neither Mangum nor Chen testified about whether Kingston would leave the United States market to avoid such minimal losses. Moreover, even this -.7% figure is misleading. When Mangum calculated the -.7% average loss, he included the years after 2008 when Kingston's margins were allegedly lower because it was acting as a reseller and it would not owe any royalties. Even if I were to overlook that error, this calculation does not account for SanDisk's right to royalties for its flash memory chip patents. Kingston is still operating on the false assumption that the proper baseline for comparison is a situation in which it pays no royalties, failing to differentiate the effect of the valid from the allegedly invalid royalties.

b. If aggregators pay SanDisk's licenses or become resellers, will the quantity of USB flash drives supplied in the United States decrease or will the price of USB flash drives increase?

Even if Kingston had proven that SanDisk's licensing program would injure Kingston or other aggregators, Kingston must show more than injury to one or a few firms. A firm may unreasonably restrain trade by excluding competitors, but only if the exclusion raises prices above the competitive level or drives output below it. Roland Machinery Co. v.

Dresser Industries, Inc., 749 F.2d 380, 394 (7th Cir. 1984). The federal antitrust laws are concerned not with the welfare of competitors but the health of the competitive process, and healthy competition has winners and losers. Id. at 393. Kingston has adduced no convincing evidence that prices will increase or output will decrease in the USB flash drive market if aggregators face higher costs because they pay SanDisk's licenses or switch to a reseller model. The nature of the USB flash drive market and the evidence about firms' pricing behavior suggest that neither price nor output would be adversely affected.

Kingston had access to evidence about whether competition in USB flash drive market is affected when aggregators switch to the reseller model or pay SanDisk's royalties. Kingston became a reseller in 2009, but Mangum did not analyze the effects on the market price or output after such a large aggregator switched to the reseller model. Id. at 91-92, 95. Many aggregators accepted SanDisk's licenses in 2007, yet Mangum did not analyze the affect on the market when they began paying royalties.

The evidence that Kingston did present suggests that market prices are unlikely to change if aggregators begin paying royalties or switch to a reseller model. Edge Tech began paying royalties in 2008 but did not raise prices to offset this cost. PNY paid royalties in 2008 and switched from being a reseller to an aggregator in 2009, but its prices continued to fall and its sales continued to increase. Kingston did not raise its prices after switching to the reseller model in 2008.

The USB flash drive market is so competitive that firms cannot pass on their cost increases by raising the price of their USB flash drives, as Kingston's own witnesses testified. Mangum, Tr. Trans., dkt. #465, 91-95; Chen, Tr. Trans., dkt. #455, 125-27. The USB flash drive market is largely commodified because drives from different firms are not readily distinguishable from one another. Because consumer's primary concern is storage capacity and price, firms set their prices according to the market price rather than on their costs. Tr. Trans., dkt. #465, at 89-90; Ciano, Tr. Trans., dkt. #458, 57-58. Mangum testified that in the 2007 cases, he had concluded that even if Kingston had been required to pay a 4% royalty on United States sales, it would have been unable to raise its prices because of the competitive market. Tr. Trans., dkt. #465, at 81. Aggregators' profit margins will diminish if they begin paying SanDisk's royalties or switch to a reseller model, but Kingston did not prove by a preponderance of the evidence that the market prices or quantity supplied would be adversely affected.

c. If aggregators leave the market, will the price of USB flash drives increase or output decrease?

Even if Kingston had proven that SanDisk's licenses would force aggregators to leave the market, it did not prove that the loss of aggregators would affect competition in the United States flash drive market. Kingston's argument is that aggregators play a special role

in fostering price competition in the USB flash drive markets. Kingston has two arguments to support this proposition: (1) aggregators are more efficient than vertically integrated manufacturers and use their cost advantage to foster price competition; and (2) prices are already higher in the United States than in foreign markets because more aggregators compete in foreign markets.

Kingston's argument that aggregators are more efficient relies on its theoretical analysis of the USB flash drive market and on statements by SanDisk's executives about the competitive situation in 2006 and 2007. Kingston's theoretical analysis ignores the benefits of vertical integration and overstates aggregators' advantages.

According to Kingston's theory, fabricators have high fixed costs and low marginal costs, which gives them an incentive to continue full production of chips. When demand weakens, this causes periods of oversupply that permit aggregators to purchase chips at low cost. When one such period of oversupply occurred in 2006, aggregators gained a competitive edge. In particular, Kingston used its cost advantage to compete on price and expand its United States market share. In response, SanDisk devised its licensing program to target the aggregators who posed a competitive threat.

Kingston's analysis of the importance of aggregators ignores the efficiency advantages of vertical integration. By receiving components through internal channels, vertically integrated firms spend fewer resources locating components in the merchant market (they

must still spend some resources to track and price inputs correctly). In addition, by participating in the upstream (manufacturing) and downstream (retail) market, a vertically integrated firm increases downstream competition and reduces the profit margin taken by intermediate firms in the supply chain.

Moreover, Kingston's analysis overstates aggregators' advantage in times of oversupply. When market prices fall, the cost of components falls for everyone. The "cost" of chips falls for a vertically integrated firm because it should value chips that it uses internally at their opportunity cost, which is the price it could obtain by selling them to a third party. Many vertically integrated firms also sell flash memory chips and benefit when aggregators purchase chips and prop up prices. Furthermore, when supply is limited and prices rise, aggregators will lose any purported cost advantage they had. A complete analysis would have compared the respective costs and benefits of each method of production. Neither Mangum nor Kingston undertook such an analysis.

Kingston's internal documents confirm my conclusion that the facts are more complicated than the theoretical picture Kingston presented at trial. Kingston argued that vertically integrated firms have higher costs because of their investments in facilities and patents. However, in an internal presentation entitled "Competitive Analysis," Kingston concluded that SanDisk had higher net margins because its fabrication facility and intellectual property lowered its costs. Exh. 20. The internal documents suggest that even

Kingston recognizes that vertical integration may have efficiency advantages.

Dr. Mangum, Kingston' expert, testified at trial that aggregators have lower costs, but his opinions on this subject relied entirely on statements from employees and executives of SanDisk and Kingston. Tr. Trans., dkt. #458, at 136-44; dkt. #465, at 10-12, 132. When Kingston identified specific statements on which Mangum relied, the statements were limited to certain time periods and speculative conclusions lacking any apparent foundation. E.g. Tr. Trans., dkt. #458, at 143-44; Tr. Trans., dkt. #465, at 38-40. The only objective evidence on which Mangum relied to conclude that aggregators had lower component costs was a market report from 2007, in which Gartner reported that Kingston, along with Transcend and A-Data, gained market share by purchasing large quantities of chips at low cost. Kingston produced no evidence that aggregators enjoyed similar purchasing advantages at other times or that this advantage in times of oversupply outweighed the disadvantages when supply and demand were aligned. More important, as I explained above, vertically integrated firms and aggregators should value their components similarly. If aggregators are more efficient, it must be because their incremental costs are lower, but Kingston produced no data about the cost of assembling, marketing or distributing USB flash drives. Therefore, I conclude that Kingston has failed to show that aggregators are more efficient, on balance, than vertically integrated firms.

Kingston also argued that it is a particularly efficient firm and would represent a

special loss to the USB flash drive market. It maintained that as a large aggregator, it can purchase chips opportunistically at prices lower than the spot market and even lower than SanDisk can produce them. It failed to substantiate these claims. The only data it offered about its component costs was specific to the first quarter of 2008. It produced no evidence that it enjoyed similar advantages at other times or that its costs for assembling, marketing or distributing USB flash drives are lower than the costs of SanDisk, other vertically integrated firms or other aggregators.

Kingston has also not proven that the loss of aggregators would lead to price increases. Kingston offered no data to support its theory that aggregators' prices are lower than the prices charged by SanDisk or other vertically integrated manufacturers. To predict the effect of increasing the costs for aggregators or forcing aggregators to exit the market, Kingston would have had to analyze the potential reactions by firms unaffected by SanDisk's challenged licenses. The likelihood that a reduction in output by a large aggregator would increase market prices depends on the capacity and incentive of other firms to increase production or to enter the market. Kingston's expert did not undertake this analysis. Moreover, he ignored available evidence to test the theory that the loss of a large aggregator would raise prices. Two large aggregators, Memorex and Imation, stopped selling USB flash drives between 2006 and 2010. Mangum did not analyze whether their exit increased prices or whether other firms responded with increased output.

Several features of the USB flash drive market suggest that it could absorb the loss of Kingston or other aggregators with little effect because other firms would increase output. Small firms have demonstrated their capacity to expand output, more than doubling their share to 35% between 2007 and 2010. Private label USB flash drives also doubled their market share to 10%. In addition, flash memory chip manufacturers would have strong incentives to replace any reduction in output by aggregators. These firms have a strong incentive to maintain high levels of production and to insure that there are uses for their chips. The cost to expand downstream is low because it is comparatively simple and cheap to assemble chips and controllers into flash drives. Chip manufacturers like Samsung and Toshiba already have a large retail presence. If Kingston or other aggregators were to reduce their output, these manufacturers will likely expand into the downstream market or sponsor an aggregator to use its chips.

Kingston's expert did not give adequate attention to these potential market effects. Mangum argued that his market share analysis showed that other firms are not waiting to take over Kingston's output, but he did not provide a comprehensive survey of market participants or analyze the capacity of particular firms or types of firms to increase output. The fact that some firms have left the market does not suggest that other firms are not able to expand output. On the contrary, Memorex and Imation left the market with no apparent effect on price or output. Mangum did note that SanDisk had concluded in an internal

presentation that Samsung was unlikely to expand downstream into SD cards because of a conflict among its internal divisions. However, he did not discuss Samsung's incentive to insure downstream demand or the fact that Samsung has partnerships with downstream firms. Even if Mangum's view of the presentation were correct, that still leaves four other large chip manufacturers.

In the absence of reliable empirical data to support its theoretical analysis of the USB flash drive market and aggregators' competitive advantage, Kingston rested its case primarily on statements by SanDisk's executives supposedly acknowledging that aggregators play a crucial role in maintaining competition. Kingston relies heavily on two comments by SanDisk's founder and former CEO, Dr. Harari. In a 2007 quarterly earnings call, Harari told investors in 2007 that SanDisk's profit margins were low because of the "crazy competitive" situation. Exh. 289. In testimony before the International Trade Commission in 2007, he said that SanDisk "has many capable competitors such as Kingston, Imation and Transcend and these competitors put enormous pricing pressures on the market for our products." Harari Dep., dkt. #468-10, at 26. These isolated comments are not very probative. In the first, Harari is describing a specific time period and does not even mention aggregators. In the second, he acknowledges that competition from these firms decreases prices, but he never suggests that their aggregator model makes them more efficient or gives them a competitive edge.

Kingston also cites deposition testimony by SanDisk's Vice President of Retail Sales, Douglas Hauck. Hauck stated that, historically, aggregators' prices have been lower than SanDisk's prices in the United States and that SanDisk tried raising its prices in 2009 but competition from aggregators forced it to bring them back down. Hauck Dep., dkt. #468-5, at 87. Hauck also testified that SanDisk does not use cost reductions to reduce prices "proactively." Id. at 281. Hauck's testimony offers some support for Kingston's claim that aggregators have lower prices and compete on price more readily, but his general statements are not enough to corroborate Kingston's theory about the role aggregators play in the USB flash drive market. His testimony does not prove that aggregators are more efficient, that SanDisk used its licenses to exclude aggregators and raise prices or that such a strategy has any likelihood of success. More important, SanDisk's beliefs were not relevant to the issues at trial. As to those, Kingston needed reliable evidence about efficiency and market price.

Kingston's final argument is that prices for USB flash drives in the United States are higher than prices in foreign markets because more aggregators compete in foreign markets. Kingston submitted a chart listing prices charged for USB flash drives on April 1, 2011 by Kingston, Transcend, A-Data and PNY in the United States and various foreign regions. Exh. 672. Mangum used this chart to draw conclusions about the markets in the United States and foreign regions, but it is not a reliable basis for comparing USB flash drive prices. Rather than listing the average price for USB flash drives, it lists only the prices charged by

four aggregators; it does not control for general differences in consumer prices across these regions and it does not indicate whether similar price differences existed at other times. The chart does not offer any basis on which to hypothesize possible causes of these differences as of April 1, 2011. Finally, it does not compare prices across the same regions. It lists A-Data and Kingston's prices in Latin America, Europe and the United States, PNY's prices in the United States, the United Kingdom and Germany, and Transcend's prices in Latin America, Europe and the United Arab Emirates but not the United States.

Chen, Kingston's Vice President of Sales and Marketing, testified that prices are lower in European markets because more aggregators compete in Europe. His testimony is not particularly persuasive; the only bases for his conclusion were his experience in these markets as a businessman and the prices listed in the price chart discussed above. Although Kingston proved that its own prices were higher in the United States than in Europe or Latin America, the cause of this difference remains unclear. Chen attributes Kingston's higher prices to its litigation costs and to its reseller model. However, as I noted above, Kingston offered no empirical data to corroborate this assertion, Kingston does not set its prices based on its costs and Kingston's prices did not change after it switched to a reseller model. Therefore, I conclude that Kingston has not shown that greater competition from aggregators causes international prices for USB flash drives to be lower than prices in the United States.

Because Kingston has failed to prove that SanDisk's putatively invalid licensing terms have adversely affected competition or that they will have such an effect in the future, SanDisk is entitled to judgment in its favor on Kingston's Sherman Act counterclaim.

B. California's Unfair Competition Law

The California Unfair Competition Law prohibits "unfair competition," which it defines as "any unlawful, unfair or fraudulent business act or practice and unfair, deceptive, untrue or misleading advertising and any act prohibited by [the California false advertising statute]." Cal. Bus. & Prof. Code § 17200. Kingston argues that SanDisk's system-level royalties impose unfairly discriminatory royalties on downstream firms and that California recognizes that price discrimination in supplier relationships can be unfair even if it is not an antitrust violation. Motors, Inc. v. Times Mirror Co., 102 Cal. App. 3d 735, 740-41 (Cal. Ct. App. 2d Dist. 1980).

However, the California Supreme Court rejected the broad public policy balancing test used to define "unfair" practices in Motors, Inc., replacing it with the following test:

When a plaintiff who claims to have suffered injury from a direct competitor's "unfair" act or practice invokes section 17200, the word "unfair" in that section means conduct that threatens an incipient violation of an antitrust law, or violates the policy or spirit of one of those laws because its effects are comparable to or the same as a violation of the law, or otherwise significantly threatens or harms competition.

Cel-Tech Communication, Inc. v. Los Angeles Cellular Telephone Co., 20 Cal. 4th 163, 186-87, 973 P.2d 527, 544 (Cal. 1999). Kingston argues that the Cel-Tech test is limited to direct competitors and the court did not purport to define unfair practices in a vertical supply relationship such as between SanDisk and its licensees. Id. at 187 n.12. However, Kingston cites no cases indicating that California courts would apply the old fairness balancing test to vertical supplier relationships. Scripps Clinic v. Superior Court, 108 Cal. App. 4th 917, 940 (Cal. Ct. App. 4th Dist. 2003) (noting uncertainty about whether balancing tests applies to other unfair practices). Moreover, SanDisk and its licensees have both a supplier and a competitor relationship. Kingston complains that aggregators face a disadvantage when competing with SanDisk in downstream markets. In other words, Kingston complains about having to compete on unfair terms. In this situation, I conclude that the California Supreme Court would require Kingston to show an incipient violation of the antitrust laws. Because I have concluded that Kingston has not proven that SanDisk's licenses are likely to be harmful to competition, SanDisk is entitled to judgment on Kingston's counterclaim under the California law.

In the alternative, SanDisk's patent licensing terms would be shielded by the "safe-harbor" doctrine, which prevents a plaintiff from asserting an unfair competition claim if other legislative provisions " 'bar' the action or clearly permit the conduct." Cel-Tech, 20 Cal. 4th at 182-184, 973 P.2d at 544 . The Patent Act permits patent owners to use price

discrimination to maximize their licensing income, absent a showing of anticompetitive effects. USM Corp. v. SPS Technologies, Inc., 694 F.2d 505, 512-13 (7th Cir. 1982). Kingston argues that the California legislature has not expressly authorized price discrimination by a patent-holder, but the California Unfair Competition Law cannot make illegal a practice that is recognized by the federal courts as a lawful exercise of a patent. If it did prohibit discriminatory pricing in the absence of anticompetitive effects, its decision would be preempted by the patent laws because policy decisions about the fair use of patents falls to Congress. Biotechnology Industry Organization v. District of Columbia, 496 F.3d 1362, 1373-74 (Fed. Cir. 2007). Either Kingston's counterclaim falls within the Unfair Competition Law "safe-harbor" or actions under the law for discriminatory patent licensing are preempted by federal law; under either approach, SanDisk is entitled to judgment as a matter of law.

ORDER

IT IS ORDERED that plaintiff SanDisk Corp. is entitled to judgment in its favor on defendants Kingston Technology Co. Inc. and Kingston Technology Corp.'s remaining counterclaims under Section 1 of the Sherman Act, 15 U.S.C. § 1, and under the California Unfair Competition Law, Cal. Bus. & Prof. Code § 17200. The clerk of court is directed to enter judgment in favor of plaintiff on defendants' count XXIV: Sherman Act Section

I and count XXV: California Unfair Competition Law.

Entered this 27th day of March, 2012.

BY THE COURT:

/s/

BARBARA B. CRABB

District Judge